

Dear Students and Parents/Guardians,

To begin the year I would like to take this opportunity to inform you about some of the expectations of my class. Please read through the expectations, grading rubric, and Student & Parent Handbook. The bottom portion of this form should be signed by both the student and a parent/guardian and returned during the first two weeks of the semester. Please write your name and information clearly as I wish to build a contact list to periodically send out class information. If you have any questions or concerns the best way to reach me is by email.

Sincerely,

Mr. Rowan Wing

wing_rowan@stvrain.k12.co.us

I have received and reviewed a copy of your classroom expectations, grading rubric, and the Student & Parent Handbook.

Student Signature: _____ Email: _____

Parent Signature: _____ Printed Name: _____

Parent's Email (please write clearly): _____

Best daytime contact number: _____

PRINT Student's name: _____ Period: _____

Advanced Placement Calculus

This course is designed for college-bound students. Topics will include properties of limits, differentiation, and integration. Students will be expected to apply these to a variety of functions including polynomial, rational, exponential, logarithmic, and trigonometric. Students will demonstrate their understanding using written and verbal explanations. Throughout the course, students will be working in cooperative groups and focusing on problem solving and application.

CLASSROOM EXPECTATIONS

Each student is expected to . . .

1. Respect each and every person and all property in the classroom.
2. Come to class prepared to work and with all necessary materials including textbook, calculator (see note below), notebook (a 3-ring binder with dividers and loose-leaf paper works best), completed assignments, paper, pencil, and graph paper.
3. Be in their seat working on the warm-up assignment when the bell rings. Any student not in their assigned seat on time will be marked tardy.
4. Put away all portable audio/video players and cell phones upon entering the classroom.

CALCULATORS

Each student is **REQUIRED** to have a scientific calculator with at least trigonometric and logarithmic capabilities (I would recommend any from the TI-30XII series). Students are required to have the calculators with them everyday. It is **highly recommended** that all students have a graphing calculator. I would suggest either a TI-83 Plus or a TI-84 (these models will be best supported in class). Calculator games will not be tolerated.

ELECTRONIC DEVICES AND CELL PHONES

There will be absolutely no cell phones allowed in the classroom. The first time I see your phone out, I will ask you to put it away. If I see it out again, even during a different class period, you will be asked to leave the room. PARENTS, I know that it is important for you to have contact with your children, but I ask you not to call them during class. If they see that you are calling, they feel obligated to answer. If you must call during class, please go through the office 720-494-3721 and they will come get your student, send them a message, or page them directly through the classroom phone.

Other electronic devices will be subject to the same procedure as cell phones.

ABSENCES

Students with excused absences will be given two calendar days for each day absent to make up missed assignments. If you are absent it is YOUR responsibility to find out what you missed, make it up and turn it in. Assignments should be turned into the basket to be graded. If you need to make up a test or discuss an assignment, please make arrangements to meet with me after school. If you are attending a school related activity and will miss class, YOU need to make arrangements prior to the activity. Please also refer to the Student & Parent Handbook for more information on attendance, unexcused absences, and make up work.

GRADING

A standards-based assessment system will be used to evaluate all students. Students must demonstrate clearly their understanding and expertise in the mathematics of each unit on daily work, homework, presentations, extended problems, long-term assignments, as well as on quizzes and tests. Grades will be assigned accordingly. Assessments will be weighted 70% and all other Learning Activities will be weighted 30%. There will generally be 1-2 Learning Activity grades and 1-2 Assessment grades per unit. Please refer to the Student & Parent Handbook for more information on standards-based education. The standards for Calculus can be accessed through the St. Vrain Valley web page at www.stvrain.k12.co.us.

DAILY ASSIGNMENTS

Any assignments given in class will be due at the beginning of the next class period unless otherwise noted. Assignments should be turned into the appropriate basket at the beginning of class. Assignments will be given a score of 0, 1, or 2 based on completeness and quality. I expect to see effort on each and every problem assigned. Students should show all work and box their answers. If an assignment is not completed on time, it may still be turned in on or before the day of the unit test for a C. After the end of the unit, **late work will not be accepted**.

ASSESSMENTS

Assessments will be graded according to the attached rubric. On each problem of an assessment, I will be assigning points for:

- | | |
|---------------------------|---|
| 1) Problem set-up: | define all terms and variables, explain <i>why</i> a particular equation/process is used or works |
| 2) Process and solution: | show all the steps to solve the problem including any steps completed on the calculator, clearly mark solution including any units |
| 3) Checking the solution: | Comment on the reasonableness of the solution, use a different method to check, substitute solution back into the original equation/situation |

Example 1:

A bus company raises the prices of its tickets by 3.4% per year. In 2000, the price of a ticket from Dallas to New Orleans was \$50. If this pattern continues, when will the price exceed \$70?

1) Problem set-up:

I know that this situation would not be linear because the amount of increase each year would vary. I further know that this situation would be modeled with an exponential equation because the increase each year is found by *multiplying* the previous year's price by a common ratio of 0.034 (3.4% as a decimal). I would use the equation $f(x) = ab^x$, where x is the number of years since the year 2000, y is the price each year as a function of x , a is the initial price (the price in 2000), and b is the percent increase plus 1. I would have to add 1 to the percent increase to keep my previous price.

2) Process and solution:

$$70 = 50(1 + 0.034)^x$$

$$70/50 = 1.034^x$$

$$1.4 = 1.034^x$$

$$x = \log(1.4)/\log(1.034)$$

$$x \approx 10.06 \text{ years after 2000}$$

So in 2010 the price would be under \$70, but in 2011 the price would be over \$70.

3) Checking the solution:

$$f(10) = 50(1.034)^{10}$$

$$f(10) = \$69.85$$

$$f(11) = 50(1.034)^{11}$$

$$f(11) = 72.23$$

I could also solve this graphically by entering $Y_1 = 50(1.034)^x$ and $Y_2 = 70$ and looking for the intersection. When I did this I got the same answer.

The answer of 10-11 years is reasonable because I know that a rough estimate for doubling time is 70/percent rate, so the price would double in about 20 years and \$70 is about halfway to doubling and 10-11 years is about halfway to 20 years.

Example 2:

What is the domain and range for the table below?

Age (years)	7	8	9	10	11	12	13	14	15
Height (cm)	119.3	127.0	132.0	137.1	142.2	147.3	152.4	157.5	162.2

1) Problem set-up:

Domain is the set of x-values (the independent variable)

Range is the set of y-values (the dependent variable)

Example 2 (cont.):

2) Process and solution:

For this problem I know that age is the independent variable and height is the dependent variable because the average height of a kid depends on their age.

Domain: [7, 15]

Range: [119.3, 162.2]

3) Checking the solution:

There is no check for this problem

WIKISPACE

I have a wiki page at <http://mrwing.wikispaces.com> on which I will periodically post assignments, notes and other class information.

ADDITIONAL HELP

If you begin to fall behind or get lost, please come see me immediately. Many math problems can be cleared up with only a few minutes of consultation if they are addressed promptly. I am available after school on Monday and Wednesday until 3:00 (with small exception). I am also available to help by appointment if these times do not work. I am here to facilitate your learning and I encourage you to come in any time to get your questions answered.

CONTACT INFORMATION

The best way to contact me is through my email at wing_rowan@stvrain.k12.co.us. I am very prompt with my email replies and will respond within a day or two. If you do not hear from me after two days, please email again or call the office at 720-494-3721 and ask them to leave a message for me. Feel free to contact me anytime with concerns, questions, positive feedback, or just to do a check in. That said, I encourage you to communicate as much as possible with your child/parent regarding grades, absences and assignments before contacting me. Part of my goal as a high school teacher is to help my students develop responsibility for their own learning. This includes writing down assignments, dealing with missed work and absences, and taking responsibility for communicating effectively about grades.



MATHEMATICS RUBRIC

A – Advanced (Exceeds Expectations)

- I demonstrate an in-depth understanding of the problem by identifying the relevant information and by clearly explaining my process and solution, including why the process works.
- I recognize multiple approaches or methods (when applicable) and/or a generalization or logical proof. I demonstrate their use in finding a solution.
- All aspects of my solution are completely accurate and detailed, and I checked my solution for accuracy and to be sure it was reasonable.

B – Proficient (Meets Expectations)

- I demonstrate a good understanding of the problem by identifying the relevant information, and by clearly explaining my process and solution.
- I recognize an appropriate method, and I demonstrate its use in finding a solution.
- All essential aspects of my solution are there, but the end product is not accurate. I checked it for accuracy and to see if it was reasonable, and I indicated why it wasn't.

C - Partially Proficient (Revise)

- I demonstrate a partial understanding of the problem by having difficulty identifying all relevant information, and my explanation of the process and solution is difficult to follow.
- I recognize an appropriate method, but I am only able to partially demonstrate its use in finding a solution.
- All essential aspects of my solution are there, but the end product is not accurate. There is no indication that I checked my solution for accuracy or to be sure it was reasonable.

I – Unsatisfactory (Incomplete)

- I demonstrate little or no understanding of the problem because I am unable to identify all relevant information, and I provide little or no explanation of the process and solution.
- I am unable to recognize an appropriate method and demonstrate its use in finding a solution.
- I have errors in my solution, and didn't check my solution for accuracy or to be sure my answer was reasonable.